NRCS
Alabama NRCS
Tech News
December 2005

Calendar

Jan 10 - Forestry Committee, Auburn, AL
Jan 20 - Cawaco RC&D Council Annual Meeting, Birmingham, AL
Apr 11-13 - Southern Pasture Forage Crop Conference, Auburn, AL
May 17 - Colbert County Water Festival, Northwest Shoals Community College, Tuscumbia, AL
Jun 12-16 - Environmental Education Week, Madison Co, AL

In this Issue:

Conservation Tillage Pays Everyone

by Julie A. Best, Public Affairs Specialist, USDA-NRCS, Auburn, AL

For the past four years Team Conservation Tillage has had a tent at the Sunbelt Ag Exposition in Moultrie, Georgia. With over 200,000 visitors each year, it is no surprise that the exhibit gets bigger and better!

Team Conservation Tillage is a group of conservation partners from Auburn University, the University of Georgia, Natural Resources Conservation Service (NRCS) in Alabama and Georgia, the agricultural Research Service, and the Georgia Conservation Tillage Alliance.

The exhibits provided a visual experience for visitors with a limited knowledge of conservation tillage (CT). They could see cover crops planted in pots, fields with various percentages of residue/cover, and a bin of soil with a camera so people could see living organisms found under ground.

A simulated irrigation system demonstrated the benefit of a cover crop in water conservation.

Outside the tent was equipment of various kinds and a simulated irrigation system.

The exhibits took many hours of planning and preparation. The payoff came when interested individuals came through the tent and the conservation partners got to tell the CT story—a crop production system that minimizes soil disturbance. Farmers don't plow or harrow the soil, but plant seeds directly into a cover crop.


Attendees view living soil organisms.

CT helps reduce soil erosion, saves energy by reducing trips over the field, improves water use efficiency, and improves water quality. These systems help farmers become more profitable while being good stewards of the land—*Conservation Tillage Pays Everyone!*

Team Conservation Tillage is a unique example of how collaboration can leverage funds and ideas to create wonderful opportunities for education.

Silt Fence Alternatives

by Perry L. Oakes, PE, State Conservation Engineer, USDA-NRCS, Auburn, Alabama

Silt fences have been widely used on construction sites for years. When properly located, installed, and maintained, silt fences can provide some sediment control. However, most silt fences are misused and often fail.

The erosion and sediment control industry are developing new products which can sometimes be used in lieu of a silt fence and are installed with little or no equipment, just hand tools. One such product is often referred to as a "wattle".

A wattle is basically a long tube of fibrous material, like wood shavings, bundled in plastic netting. It can be purchased in various diameters and lengths. A wattle is easily handled without heavy equipment, doesn't require a trench to be dug like with a silt fence, and is biodegradable. Water filters through (not underneath) the diameter of the porous, interlocked fiber log matrix. As water filters, velocity is naturally reduced and sediment is collected on the upstream side of the wattle. A wattle can be used as a sediment control device on drop inlets and as small check dams to stabilize a channel grade and catch some of the sediment.

Wattle used as a check dam.

Wattle used as an inlet control device.

Before buffer strip installation.

After temporary buffer strip installed.

Another product that can be used in lieu of a silt fence, especially on subdivision lot development, is a blanket type, temporary buffer strip. This product resembles a narrow strip of erosion control blanket and acts to filter sediment from laminar flow type of runoff. The blanket is often made of three dimensional wood shavings with plastic netting on top. The buffer strip is biodegradable and can often be left in place during landscaping. The sod is laid directly on top of it.

Dealing With Herbicide Application Rate Confusion

by Jim Frost, District Conservationist, USDA-NRCS, Scottsboro, Alabama

Let's face it, there's a lot of confusion about herbicide application rates. One person says he's using a 3% solution; the next person says he's using a 1.2% solution. Both may be using the same amount of herbicide, but are viewing the situation differently. What's going on here?

Herbicides are produced and marketed in an array of product names and concentrations. Some are formulated to be applied in rates of pints per acre, quarts per acre, and even gallons per acre, while others are formulated to be applied in ounces per acre. Mixing the appropriate amount of chemical and carrier (usually water) is critical to achieve the expected results and avoid damaging unintended targets, as well as damaging the environment. Another consideration is that some of these low volume herbicides are very expensive, over $600 for 3 pounds.

The key to the proper mixing and application of herbicides is to understand that each product has its own concentration of active ingredient, usually referred to as "**percent ai.**" Referring to a solution by this term establishes a common ground, or a standard, by which different brands can be compared according to cost and concertration needed.

For example, a review of one list of glyphosate products, the active chemical in the herbicide originally marketed as "*Roundup*", finds more than 65 different products that are produced and sold under an assortment of brand names. These products are formulated to contain the manufacturer's desired concentration of active ingredient, ranging from technical grade material at 98% concentration down to the 1.8% off-the-shelf product sold at *Walmart*. Both products use the same chemical active ingredient, but are vastly different in cost and application (mixing) requirements. Most people think that "*Roundup*" is "*Roundup*" and that all are equal. Herein lies the source of the confusion.

To illustrate, let's say a farmer says he applied a solution of glyphosate herbicide called "*RazorPro*" for privet control. He has a 100 gallon tank in which he added 3 gallons of glyphosate product and enough water to fill the tank to 100 gallons. He now says he has a 3% solution. After all, the math shows he's right--3 gal/100 gal=.03, or 3%.

What he didn't realize is that the *RazorPro* product is only 41% **ai.**, so the math really looks like this: 3 gal/100 gal x .41 = .012, or 1.2% active ingredient concentration, less than half the concentration he thought he had applied. If the target species required a treatment solution of 3% to achieve the expected level of control, the farmer will likely be dissatisfied with his results. Moreover, he likely would never be aware of the real reason for his poor results.

Another source of confusion is that chemical company reps and others sometime provide recommendations for applied concentration based on a certain product, i.e., a 3% solution of *RazorPro.* The intent is to simplify things, but too often the user fails to understand that the person making the recommendation has already accounted for the percent **ai** and the actual target solution is 1.2% **ai**. A 3% product concentration can be very different from a 3% ***ai*** concentration. If this method is used, clear communication is essential to indicate that the solution is based on a specific herbicide product, i.e., *RazorPro*, 41% ai. Too often in discussions, the user simply recalls he used a 3% glyphosate solution, which is incorrect.

Formulating a herbicide solution of a certain concentration can be confusing. NRCS employees have an opportunity to help clarify the process. Take the time to provide the specifics to clients. It could make the difference between success or failure of the project, and it could make dealing with herbicides less confusing.

Trade names are used solely to provide specific information. Mention of a trade name does not constitute a guarantee of the product by the U.S. Department of Agriculture, nor does it imply endorsement by the USDA or NRCS over comparable products that are not named.

Landowner Accomplishes Goals with EQIP Assistance

by Rhoda Kerr, Soil Conservation Technician, USDA-NRCS, Opelika, AL

Mr. Gerald Gooden had a problem. Weed infestation, specifically blackberry briars and thistle, in his grazing and forage land brought him to the Lee County NRCS/SWCD office. After explaining his problem, the staff suggested that the Environmental Quality Incentives Program (EQIP) could be used to help improve his grazing system.

EQIP helps producers develop a comprehensive farm plan with a time-frame for implementation and cost-share financial assistance. Gooden realized there was much more than just weed eradication that he could do to improve water quality, grazing land, productivity, and the overall health of his herd.

In 2002, Gooden made an application for EQIP to improve his beef cattle operation. Eddie Jolley, the District Conservationist (DC) at that time, met with him on his property. They discussed conservation practices that might be of interest and developed a conservation plan to guide Gooden as he implemented practices to achieve his goals.

Gooden decided that his operation would benefit through rotational grazing, pest management treatment over three years, pipeline and troughs with gravel pads, and a small amount of critical area treatment.

He has installed all of the cross fencing originally planned for the rotational grazing system. He has established permanent vegetation and mulched the critical areas. He has also installed gravel pads, pipeline from the county water system, and water troughs.

To get control of the weed infestation, Gooden spot sprayed briars the first year of the contract rather than spraying the entire acreage. He realized the need to complete the total acreage and revised his contract to spray three additional years under EQIP. As of spring 2005, the thistle infestation seems to be eradicated and the briars are scarce.

Since his initial contact with NRCS, Gooden has received additional technical assistance from various NRCS staff as he began installing practices and modifying his plan.

"Working with Mr. Gooden has been beneficial in two ways," says DC Jason Gardner. "Mr. Gooden has received the technical and financial assistance that he needed to improve his beef operation. A second benefit has been the invaluable experience that new soil conservationists and student interns from Alabama A&M University and Auburn University have gained in working with him as he implements his conservation plan.

Gerald Gooden has made his beef cattle operation and the EQIP program a success. Lee County NRCS/SWCD staff are proud to have played a part in helping Gooden accomplish his conservation goals.

Rhoda Kerr inspects a newly installed water trough with a heavy use area that is supplied with water from the county water system. The trough greatly improved the rotational grazing system.

In the picture insert, Ellen Knight, student intern, stands in the thistle infested pasture. Mr. Gooden stands in the pasture after the herbicide treatment.

Lee County DC Jason Gardner (c) and Tech Assistant Daniel Goin (r) review the conservation plan with Gerald Gooden.

Gooden, with Soil Con, Merry Buford (l) and student intern Antoinette Pulliam, inspects mulch and vegetation on a critical area.

New NRCS Employees Learn Zigzag Transect Method

by Tim Albritton, State Staff Forester, USDA-NRCS, Auburn, AL

The NRCS New Employees Training session was held September 19-23 in Pike County. The week-long training covered topics including conservation planning, soil survey, soil science, new technologies, and wildlife and timber management.

A vital part of timber management includes conducting a simple inventory of the stand to determine average tree size, stocking rates, stand composition, and stand condition or health.

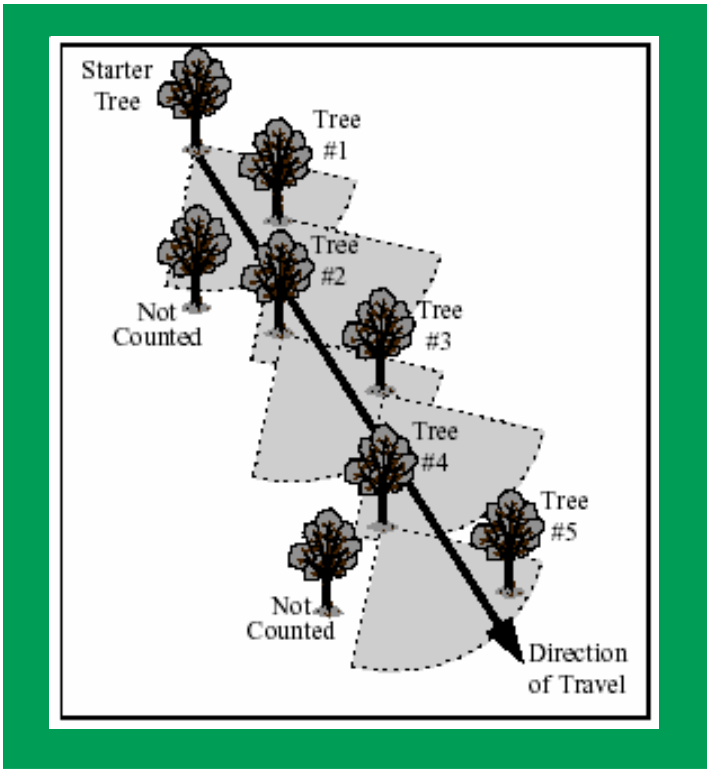
The following procedures are used to conduct a zigzag transect.

Step 1 – Select Main Stand

The main stand is usually made up of larger trees. There may be more than one general crown level. Beneath the main stand there is usually an understory of suppressed trees, advanced reproduction, or other plants. The client's principal concern should be with the main stand. (see figure below).

Step 2 – Choose a Route

Choose a route through the stand so you can sample a good cross section. Generally, this can best be accomplished by crossing the drainageways. On a sunny day you can use the sun as a direction marker by going toward it, away from it, or at some angle to or from it. A visible landmark can also be used as a direction marker.



Step 3 – Select a Starter Tree

The starter tree may be any tree that is a part of the main stand. No measurements are made of the starter tree. It serves only as a point of beginning.

Step 4 – Choose a Direction

At the base of the starter tree, face the chosen direction, place your heels together and position your toes to make a 90-degree angle. A line along the direction of travel bisects the angle formed by your feet (see figure). A 90-degree arc is printed on some information sticks to help define the angle. When a 25 inch stick is held horizontally 12 inchs from the eye, the ends of the stick form a 90-degree angle. A compass may also be used.

Step 5 – Locate Closest Tree

Locate the closest main stand tree, the center of which is within the 90-degree angle. This is tree number 1, as shown in the figure.

> By using this simple method, a forester or natural resource professional can get useful information to determine a number of useful calculations.

Step 6 – Determine Distance, Species, and Diameter

Pace or measure the distance from the center of the starter tree to the center of tree number 1. Determine the species of the tree identified in step 5 and measure its diameter at breast height (4.5 feet). Record measurements in the field notes.

Step 7 – Rate Tree Condition

Examine the tree and rate its condition as good, fair, or poor. A good tree is reasonably straight, has a sound and full crown, does not have excessive limbs, and does not have evidence of scars, wounds, or disease. A poor tree may

Joe Norris (l) and Merry Buford record tree measurements while performing a zigzag transect inventory.

have a broken top, a bad crotch, excessive limbs, canker, wounds, scars, disease, or a combination of defects. Use fair as an intermediate rating. Do not confuse species desirability with the condition rating. Rate each tree on its merits, without regard to species.

Step 8 – Repeat Process

Standing at tree number 1, repeat steps 5-7 to select, measure, and rate tree number 2. Continue in this manner until at least 20 trees have been examined. Travel in a zigzag fashion as shown in the figure

Conclusion

When this simple inventory procedure is followed, the forester or natural resource professional can use the information to determine a number of useful calculations such as the average tree spacing, the number of trees per acre, make thinning determinations, species composition, and the stand condition (health).

You have to take inventory of what you have before you can make prudent management decisions.